

*Ganguroo robustiter* sp. nov. (Macropodoidea, Marsupialia), a middle to early late Miocene  
basal macropodid from Riversleigh World Heritage Area, Australia

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Journal of Vertebrate Paleontology

SUPPLEMENTARY DATA 2

Nexus-formatted character matrix for the 30 taxa included in our phylogenetic analyses, from Kear and Pledge (2007), revised by Travouillon et al. (in press). Outgroup taxa was *Trichosurus vulpecula*. ? = missing data; - = inapplicable.

#NEXUS

BEGIN TAXA;

DIMENSIONS NTAX=30;

TAXLABELS

'Trichosurus vulpecula'  
'Balbaroo fangaroo'  
'Bettongia moyesi'  
'Bettongia penicillata'  
'Bulungamaya delicata'  
'Dendrolagus lumholtzi'  
'Dorcopsis muelleri'  
'Dorcopsoides fossilis'  
'Ekaltadeta ima'  
'Ganawamaya acris'  
'Ganguroo bilamina'  
'Ganguroo bites'  
'Ganguroo robustiter'  
'Hadronomas puckridgi'  
'Hypsiprymnodon moschatus'  
'Macropus rufus'  
'Nambaroo gillespieae'  
'Ngamaroo archeri'  
'Petrogale penicillata'  
'Potorous tridactylus'  
'Procoptodon goliah'  
'Purtia mosaicus'  
'Rhizosthenurus flanneryi'  
'Simosthenurus occidentalis'  
'Thylogale thetis'  
'Wabularoo naughtoni'  
'Wakiewakie lawsoni'  
'Wallabia bicolor'  
'Wanburoo hilarus'  
'Wururoo dayamayi'

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ENDBLOCK;

BEGIN CHARACTERS;

DIMENSIONS NCHAR=108;

FORMAT DATATYPE=STANDARD MISSING=? GAP=- SYMBOLS="012345";

CHARLABELS

[1] 'Basioccipital/basisphenoid '

II'

- [2] 'FRONTAL REGION '
- [3] 'FRONTAL SINUSES '
- [4] 'POSTORBITAL CONSTRICTION OF SKULL '
- [5] 'MASSETERIC PROCESS '
- [6] 'CHEEK REGION OF SKULL '
- [7] 'LATERAL WALL OF NEUROCRANIUM '
- [8] 'PAROCCIPITAL PROCESS-ALISPHENOID CONTRIBUTION '
- [9] 'MASTOID PROCESS '
- [10] 'INFLATED ALISPHENOID FORMING AUDITORY BULLA'
- [11] 'ALIGNMENT OF MOLAR DORSOVENTRAL AXES '
- [12] 'DIGASTRIC EMINENCE '
- [13] 'MANDIBULAR SYMPHYSIS '
- [14] 'ANTERIOR PENETRATION OF MASSETER (ADULT)'
- [15] 'MASSETERIC AND INFERIOR DENTAL CANALS '
- [16] 'MANDIBULAR CANAL '
- [17] 'POSTERIOR MENTAL FORAMEN '
- [18] 'i1 OCCLUSAL SURFACE '
- [19] 'CANINIFORM TOOTH PRESENT IMMEDIATELY POSTERIOR TO

- [20] p2
- [21] C1
- [22] p3
- [23] 'P3/p3'
- [24] MOLARS
- [25] m4
- [26] P3
- [27] p3
- [28] 'm1 PROTOCONID '
- [29] 'm1 PROTOCONID '
- [30] 'Trigonid basin on m1 '
- [31] 'm1 protostylid '
- [32] 'Hypocingulid on lower molars'
- [33] 'Hypolophid formation '
- [34] 'i1 dorsal enamel flange '
- [35] 'i1 enamel '
- [36] "'Forelink" (preprotocrista) on M1'
- [37] 'M1 stylar cusp C '
- [38] 'M1 stylar cusp D '
- [39] 'M1 anterolingual cingulum '
- [40] 'M1 postprotocrista '
- [41] 'M1 neometaconule and "postlink" '
- [42] 'Postmetacrsta-postmetaconule crista '
- [43] 'Mental foramen'
- [44] 'P3 lingual cingulum '
- [45] 'Internal carotid foramen'
- [46] 'Foramen ovale '
- [47] 'Occlusal edge of i1 '
- [48] 'MEDIAL MALLEOLAR FOSSA OF ASTRAGALUS '
- [49] 'MEDIAL MALLEOLAR PROCESS OF ASTRAGALUS '
- [50] 'MALLEOLAR FOSSA BORDER OF ASTRAGALUS '

[51] 'TROCHLEAR RIDGES ON ASTRAGALUS '

ASTRAGALUS'

[52] 'POSTERIOR EDGE OF LATERAL TROCHLEAR CREST OF

[53] 'ASTRAGALAR NECK'

[54] 'NAVICULAR FACET OF ASTRAGALUS '

[55] 'Sustentaculum tali of calcaneum '

[56] 'TUBER CALCIS OF CALCANEUM '

[57] 'ASTRAGALUS-CALCANEUM FACET'

[58] 'PLANTAR RUGOSITY ON THE CALCANEUM'

[59] 'LONG AXIS OF DORSOLATERAL FACET OF CALCANEUM '

[60] 'CUBOID BODY'

[61] 'MEDIAL PLANTAR TUBEROSITY OF CUBOID '

TUBEROSITIES OF CUBOID '

[62] 'GROOVE BETWEEN MEDIAN AND LATERAL PLANTAR

[63] 'CALCANEUM-CUBOID FACET'

FACETS OF CUBOID '

[64] 'GROOVE BETWEEN DORSOMEDIAL AND VENTROMEDIAN

[65] 'NAVICULAR BODY '

[66] 'NAVICULAR PLANTAR EMINENCE '

[67] 'ASTRAGALAR FACET OF NAVICULAR '

[68] 'MESOCUNEIFORM/NAVICULAR CONTACT'

[69] 'CUBOID FACET OF NAVICULAR '

[70] 'POSTERIOR NODE ON ENTOCUNEIFORM'

[71] 'METATARSAL I'

[72] 'METATARSAL I PROXIMAL FACET MARGIN '

[73] 'METATARSAL IV '

[74] 'PLANTAR CREST OF METATARSAL IV'

[75] 'METATARSAL V FACET OF METATARSAL IV'

[76] 'CUNEIFORM FACET OF METATARSAL IV '

[77] 'INTRA-ARTICULAR GROOVE OF METATARSAL IV '

[78] 'PEDAL DIGIT V'

[79] 'LATERAL TUBEROSITY OF METATARSAL V'

[80] 'VENTROMEDIAN PROCESS OF METATARSAL V'

[81] 'METATARSAL V CUBOID FACET '

[82] 'PEDAL DIGIT IV PROXIMAL AND MEDIAL PHALANGES'

[83] 'CRUCIATE FOSSA OF PEDAL DIGIT IV PROXIMAL PHALANX '

SCARS OF PEDAL DIGIT IV PROXIMAL PHALANX'

[84] 'CROSSED SESAMOID AND OBLIQUE SESAMOID LIGAMENT

[85] 'UNGUAL PROCESS OF PEDAL DIGIT IV DISTAL PHALANX '

[86] 'POSTERIOR SURFACE OF FEMORAL SHAFT '

[87] 'CONDITION OF FEMORAL HEAD'

[88] 'DISTAL PORTION OF FIBULA SHAFT '

[89] 'TIBIA SHAFT '

[90] 'ACROMION PROCESS OF SCAPULA '

[91] 'SUPRASPINOUS FOSSA OF SCAPULA '

[92] 'CORACOID PROCESS OF SCAPULA'

[93] 'SUPINATOR CREST OF HUMERUS'

[94] 'DELTOID CREST OF HUMERUS'

[95] 'LATERAL DELTOID RIDGE OF HUMERUS'

[96] 'ENTEPICONDYLE OF HUMERUS'

[97] 'CORONAL DEPRESSION OF HUMERUS'  
 [98] 'CAPITELLUM AND TROCHLEA OF HUMERUS'  
 [99] 'SHAFT OF ULNA'  
 [100] 'OLECRANON PROCESS OF ULNA '  
 [101] 'DISTAL APEX OF ILIUM'  
 [102] 'ILIOPECTINEAL PROCESS OF ILIUM'  
 [103] 'VENTRAL PROFILE OF ANTERIOR LUMBAR CENTRA'  
 [104] 'CAUDAL CENTRA '  
 [105] 'Ventral margin of mandible'  
 [106] 'p3 transcrisids'  
 [107] 'p3 transcrisid number'  
 [108] 'Lower molar occlusal outline'

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# STATELABELS

1  
 coplanar  
 angled,  
 2  
 'NOT FLAT'  
 FLAT,  
 3  
 'NOT MARKEDLY INFLATED'  
 'MARKEDLY INFLATED',  
 4  
 ABSENT  
 PRESENT,  
 5  
 'NOT EXTENDING BELOW ALVEOLAR MARGIN'  
 'EXTENDING BELOW ALVEOLAR MARGIN',  
 6  
 'SMOOTH TRANSITION OF ZYGOMA TO CHEEK'  
 'WITH SULCUS ANTERIOR TO ZYGOMA',  
 7  
 'ALISPHENOID-PARIETAL CONTACT'  
 'WITH SQUAMOSAL-FRONTAL CONTACT',  
 8  
 'DOES NOT CONTRIBUTE'  
 'CONTRIBUTES TO ANTERIOR FACE',  
 9  
 'SMALL (<PAROCCIPITAL PROCESS)'  
 'HYPERTROPHIED (>PAROCCIPITAL PROCESS)',  
 10  
 ABSENT  
 PRESENT,  
 11  
 'CHANGING IN ANTEROPOSTERIOR DIRECTION '  
 'ALIGNED ',  
 12  
 'CENTRALLY POSITIONED '  
 'POSTERIORLY POSITIONED ',

13	'NOT ANKYLOSED '
	'ANKYLOSED ',
14	'MASSETER NOT INVADING MANDIBLE '
	'PENETRATION ANTERIOR TO M4 '
	'PENETRATION NOT ANTERIOR TO M4',
15	'MASSETERIC CANAL NOT DEVELOPED '
	'CANALS CONFLUENT ANTERIOR TO MASSETERIC FOSSA '
	'',
16	'MASSETERIC FORAMEN ABSENT '
	'DISTINCT CANAL SEPARATES MANDIBULAR AND
	MASSETERIC FORAMINA '
	'CANAL LENGTH REDUCED, FORAMINA OVERLAP'
	'CANAL LOST, SINGLE MANDIBULAR FORAMEN',
17	'PRESENT '
	'ABSENT ',
18	'REACHING TO LEVEL OF MOLAR OCCLUSAL PLANE '
	'BELOW MOLAR OCCLUSAL PLANE ',
19	'PRESENT '
	'ABSENT ',
20	'PRESENT, NOT REDUCED, PERSISTS AFTER p3 ERUPTION '
	'PRESENT, NOT REDUCED, DISPLACED BYp3 ERUPTION '
	'',
21	'PRESENT '
	'ABSENT ',
22	'BUCCALLY FLEXED '
	'ALIGNED WITH MOLAR ROW ',
23	'SHORT (<1.5M1/1)'
	'ELONGATE (>1.5M1/1)',
24	'BUNODONT '
	'BUNOLOPHODONT '
	'LOPHODONT, BRACHYODONT'
	'LOPHODONT, HYPSONODONT',
25	'MARKEDLY SMALLER '
	'NOT MARKEDLY SMALLER THAN ANTERIOR MOLARS ',
26	'LACKING POSTEROLINGUAL CUSP OR RIDGE '
	'WITH POSTEROLINGUAL CUSP '

27	'WITH POSTEROLINGUAL RIDGE',
	'cingulids absent'
28	'with distinct labial and/orlingual cingulids',
	'CENTRAL '
29	'BUCCAL ',
	'DOMINATES TRIGONID '
30	'SUBEQUAL TO METACONID '
	REDUCED,
	'not developed '
	'narrow transversely '
31	'broad transversely',
	'present as cuspid '
	'present as enamel ridge '
32	absent,
	Present
33	'absent ',
	'hypolophid and buccal crestfrom entoconid absent'
	'formed by buccal crest fromentoconid with posthypocristid low and
	posteriorly positioned'
	'formed by elevated posthypocristid, buccalcrest from entoconid
	reduced or lost',
34	
	'present '
	'absent ',
35	
	'buccal surface only '
	'buccal and dorsolingual surfaces '
	'buccal and lingual surfaces',
36	
	'absent '
	'present, diagonal '
	'buccally displaced, anteroposteriorly directed',
37	
	'present '
	'reduced to stylar crest '
	absent,
38	
	'present '
	'reduced to stylar crest '
	absent,
39	
	'present '
	'absent ',

- 40  
     'contacts metaconule '  
     'contacts metaloph buccal to metaconule '  
     absent,
- 41  
     'absent '  
     'present ',
- 42  
     'separated '  
     'continuous '  
     overlap,
- 43  
     'anterior to p3, well below diastemal margin '  
     'close to p3, well below diastemal margin '  
     'close to p3, close to diastemal margin',
- 44  
     'absent '  
     'present '  
     'present and elevated',
- 45  
     'anterior to suture '  
     'close to or posterior to basioccipital/basisphenoid suture ',
- 46  
     'lateral, floored by alisphenoid process from tympanic wing '  
     'lateral, with narrow ventral alisphenoid process '  
     'mesial, with incomplete ventral alisphenoid process',
- 47  
     'not sinuous '  
     'sinuous ',
- 48  
     'LARGE AND OVOID '  
     'SMALL AND CIRCULAR ',
- 49  
     'TRANSVERSELY BROAD AND LATERALLY FLARING '  
     'REDUCED AND TRANSVERSELY NARROW ',
- 50  
     'SHORT AND NARROWING TOWARDS EXTREMITIES '  
     'ELONGATE AND UNIFORMLY THICK ALONG LENGTH ',
- 51  
     'INDISTINCT WITH NO CLEAR ORIENTATION '  
     'OBLIQUELY ORIENTED RELATIVE TO LONG AXIS OF PES,  
     GIVING RHOMBOIDAL OUTLINE '  
     'SUBPARALLEL TO LONG AXIS OF PES, GIVING  
     RECTANGULAR DORSAL OUTLINE TO ARTICULAR FACET',
- 52  
     'CONTINUOUS '  
     'TRUNCATED ',
- 53  
     'ELONGATE AND ANTERIORLY DIRECTED '  
     'SHORT AND ANTERIORLY DIRECTED '

	54	'VERY SHORT AND PLANTARLY DIRECTED',
DIRECTED '		'ELONGATE AND CONDYLE LIKE '
		'ANTEROPosteriorLY SHORT AND ANTERIORLY
	55	
		'horizontally oriented and transversely broad '
		'steeply inclined and transversely narrow ',
	56	
		'DORSOVENTRALLY DEEP AND POSTERIORLY FLARING '
		'DORSOVENTALLY NARROW AND SUBCYLINDRICAL ',
	57	
		'BROAD WITH MEDIAL CONSTRICTION ABSENT '
		'MEDIALLY CONSTRICTED OR COMPLETELY DIVIDED ',
	58	
PLANTAR SULCUS '		'ANTEROPosteriorLY SHORT WITH BROAD, SHALLOW
		'ANTEROPosteriorLY LONG WITH PLANTAR SULCUS
NARROW, DEEP, OR ABSENT ',		
	59	
		'OBLIQUELY ORIENTED '
		'DORSOVENTRALLY ORIENTED ',
	60	
		'NOT PROXIMODISTALLY COMPRESSED '
		'PROXIMODISTALLY COMPRESSED ',
	61	
		'WEAKLY DEVELOPED '
TUBERCLE ',		'WELL DEVELOPED, FORMING PROMINENT RAISED
	62	
		'ABSENT '
		'PRESENT ',
	63	
		'WEAKLY STEPPED AND SIGMOIDAL '
		'DISTINCTLY STEPPED ',
	64	
		'ABSENT '
		'PRESENT ',
	65	
LONGER THAN DORSAL '		'CRESCENTIC IN LATERAL VIEW WITH VENTRAL EDGE
		'SUBRECTANGULAR IN LATERAL VIEW WITH DORSAL EDGE
LONGER OR SUBEQUAL TO VENTRAL EDGE ',		
	66	
		'PROMINENT AND CONDYLE LIKE '
		'REDUCED ',
	67	
ELONGATE '		'TRANSVERSELY NARROW AND DORSOVENTRALLY

SHORTENED '	68	'TRANSVERSELY WIDE AND DORSOVENTRALLY
		'PRESENT '
		'ABSENT ',
	69	
		'DORSOVENTRALLY SHORT '
		'DORSOVENTRALLY ELONGATE ',
	70	
		'PRESENT '
		'ABSENT ',
	71	
		'PRESENT '
		'ABSENT ',
	72	
		'WITH PLANTAR LIP '
		'WITHOUT PLANTAR LIP ',
	73	
TRANSVERSE WIDTH OF DISTAL FACET '	74	'SHORT AND ROBUST WITH TOTAL LENGTH < THREE TIMES
		'LONG AND SLENDER WITH TOTAL LENGTH > THREE TIMES
TRANSVERSE WIDTH OF DISTAL FACET '	75	'ABSENT '
		'PRESENT ',
	76	
		'CONTINUOUS WITH MEDIAN GROOVE ABSENT '
		'SUBDIVIDED BY DISTINCT MEDIAN GROOVE ',
	77	
		'CONVEX OR PLANAR '
		'CONCAVE AND INSET ',
	78	
		'LATERALLY OPENING '
		'VENTRALLY OPENING ',
	79	
		'WELL DEVELOPED '
		'REDUCED ',
	80	
		'WELL DEVELOPED AND POSTERIORLY EXTENDING '
		'REDUCED ',
	81	
		'PRESENT '
		'ABSENT ',
	82	
		'SHALLOW AND TRANSVERSELY ELONGATE '
		'DEEP AND CUP-SHAPED ',
	83	
		'NOT COMPRESSED '
		'DORSOVENTRALLY COMPRESSED ',

	'DEEP AND NARROW '
	'SHALLOW AND BROAD ',
84	
	'WEAKLY DEVELOPED '
	'WELL DEVELOPED ',
85	
	'TAPERING AND POINTED OR DISTINCTLY CLEFT '
	'ROUNDED AND HOOF LIKE ',
86	
	'MIDLINE BOSS VERY WEAKLY DEVELOPED OR ABSENT '
	'BEARING PROMINENT MIDLINE BOSS ',
87	
	'SPHERICAL WITH CIRCULAR SECTION AND ORIENTED
OBLIQUE TO LONG AXIS OF SHAFT '	
	'WITH DOMED SEMICIRCULAR SECTION ORIENTED
PERPENDICULAR TO LONG AXIS OF SHAFT ',	
88	
	'D-SHAPED IN CROSS SECTION '
	'CRESCENTIC IN CROSS SECTION ',
89	
	'STRAIGHT OR SLIGHTLY CURVED IN ANTEROPOSTERIOR
VIEW '	
	'SINUOUS IN ANTEROPOSTERIOR VIEW ',
90	
	'WELL DEVELOPED AND ANTERODORSALLY PRODUCED '
	'POORLY DEVELOPED AND ROUNDED ',
91	
	'ANTEROPOSTERIORLY ELONGATE AND SUBEQUAL IN
LENGTH TO INFRASPINOUS FOSSA '	
	'ANTEROPOSTERIORLY SHORTENED RELATIVE TO
INFRASPINOUS FOSSA ',	
92	
	'LARGE WITH NECK '
	'REDUCED WITHOUT NECK ',
93	
	'WELL DEVELOPED AND TRANSVERSELY BROAD WITH
DISTINCTLY POINTED APEX '	
	'REDUCED AND TRANSVERSELY NARROW WITH ROUNDED
APEX ',	
94	
	'NOT UNIFORM IN HEIGHT WITH DISTAL EXTREMITY
FORMING A STEEP INCLINE THAT MAY BEAR A RUGOSE BOSS AT ITS APEX '	
	'UNIFORM IN HEIGHT ALONG ITS LENGTH WITH DISTAL
EXTREMITY FORMING A SHALLOW INCLINE ',	
95	
	'POORLY DEVELOPED '
	'WELL DEVELOPED AND PROMINENT ',
96	
	'SEPARATED FROM TROCHLEA BY A DISTINCT GROOVE '
	'CLOSELY ABUTS TROCHLEA ',

97 'SHALLOWLY EXCAVATED AND WEAKLY DELINEATED '  
 'DEEPLY EXCAVATED AND STRONGLY DELINEATED ',  
 98 'DISTINCTLY UNEQUAL IN SIZE WITH CAPITELLUM LARGER  
 THAN TROCHLEA '  
 'SUBEQUAL IN SIZE ',  
 99 'STRAIGHT VENTRAL-EDGE PROFILE '  
 'DISTINCTLY SINUOUS VENTRAL-EDGE PROFILE ',  
 100 'DORSOVENTRALLY TALL WITH DISTINCT TRANSVERSE  
 DORSAL CREST '  
 'DORSOVENTRALLY SHORT AND ROUNDED IN LATERAL  
 VIEW ',  
 101 'TRANSVERSELY NARROWED BY POOR CONTRIBUTION OF  
 DISTAL END OF ILIAC CREST '  
 'TRANSVERSELY BROADENED BY CONTRIBUTION OF THE  
 RAISED DISTAL END OF THE ILIAC CREST ',  
 102 'REDUCED AND RESTRICTED TO A SLIGHT RIDGE '  
 'PROMINENT AND SUBCYLINDRICAL ',  
 103 'SMOOTH AND ROUNDED '  
 'BEARS DISTINCT MEDIAN KEEL ',  
 104 'CYLINDRICAL WITH SUBCIRCULAR CROSS SECTION '  
 'MARKEDLY DORSOVENTRALLY COMPRESSED WITH  
 OVOID CROSS SECTION ',  
 105 'convex (anterior mandible steeply inclined)'  
 'straight (anterior mandible shallowly inclined)',  
 106 absent  
 'coarse, deeply incised'  
 'fine, shallowly incised',  
 107 'transcristae absent'  
 or less  
 'between 5 and 10'  
 '10 or more',  
 108 'rectangular (length at least 0.3 > width)'  
 'square (sub-equal length/width)',

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MATRIX

'Trichosurus vulpecula' 0001100001 0010000002 0001100000  
 1110012210 0110010000 0000000000 0000000000 0000000000 0000000000 0000000000  
 00000000

'Balbaroo fangaroo' 0011001010 000121?001 0002110010  
 202??01211 1100100??? ?????????? ?????????? ?????????? ?????????? ?????????? ?????120  
 'Bettongia moyesi' ?000000??? 0?01111001 0110000112 2111010200  
 1010??0??? ?????????? ?????????? ?????????? ?????????? ?????????? ?????130  
 'Bettongia penicillata' 1000000101 1001011011 0110000112  
 2111010200 1020100000 1100100000 1111010?11 1010010000 0000011100 0000001000  
 01100120  
 'Bulungamaya delicata' ????00???? 1001110001 ?111000112  
 2110010201 1110??0??? ?????????? ?????????? ?????????? ?????????? ?????????? ?????0120  
 'Dendrolagus lumholtzi' 0010110100 1102211111 0112110112  
 2120001211 0111100000 1010001000 0111111111 1000010011 0000001001 1100101100  
 10101110  
 'Dorcopsis muelleri' 1000010100 0102211111 0113110112  
 2120002211 021?100000 1011001100 1111111111 1011010011 0000001111 1100111111  
 11101110  
 'Dorcopsoides fossilis' ???1????11 1?01111??1 ?102110112 2020000111  
 0100??0000 1010001100 1111111111? ?11010000 00000?00? ???????1?? ?101110  
 'Ekaltadeta ima' 0011001?10 0001211000 ?000000000 0011112210  
 0100100??? ?????????? ?????????? ?????????? ?????????? ?????????? ?????1120  
 'Ganawamaya acris' ????00???? 0001111101 ?112111000  
 1021122201 0101??0??? ?????????? ?????????? ?????????? ?????????? ?????????? ?????1120  
 'Ganguroo bilamina' 1100000001 1001110101 0112010112  
 2120010101 1110100??? ?????????? ?????????? ?????????? ?????????? ?????????? ?????0120  
 'Ganguroo bites' ?????????? ?001110??1 ?112??011? 212???????  
 ??1??????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????0120  
 'Ganguroo robustiter' 1100000001 11011101?1 0112120112  
 2120010101 1101100??? ?????????? ????001?0? ?????????? ????????0?1 0111011000  
 01100120  
 'Hadronomas puckridgi' 1110000??? 1101?11111 ?112111112  
 2120201111 0111100110 2111100110 0011111111? ?111111001 1111111100 10??0?1?0  
 ?1101121  
 'Hypsiprymnodon moschatus' 0000001001 0001110000 0000000000  
 0011012210 0100100000 1000000000 0010000110 0010000000 0000001010 0001010000  
 00001120  
 'Macropus rufus' 1000110100 1102211111 1113121112 2120002211  
 0001100000 1111111100 1111111111 1011010011 0000011101 1100100111 11101110  
 'Nambaroo gillespieae' 0011001010 0001110001 0002010000  
 0020102211 0100100001 1000000000 0010000100 0110000000 0000001010 00??0?0000  
 01011120  
 'Ngamaroo archeri' ?????????? 100111??1 ?1111?1112 211???????  
 ?????????? ????000000 0010????? ???000??? ?????01?0? ?1101111? ????0230  
 'Petrogale penicillata' 1000110101 1102211111 1113120112 2120022211  
 0001120000 1111001100 1111111111 1011010011 0000011101 1100100111 11101110  
 'Potorous tridactylus' ?000000??? 0001111011 0110000112 2110010200  
 1010??000? 1000000000 001100010? ??10000000 00000?110 0?01100000 110?0110  
 'Procoptodon goliah' 1?10?10101 1112210011 1113120112  
 2120202211 1212001110 2111100111 0011111111? 1011111101 1111111101 1001101111  
 1?101110  
 'Purtia mosaicus' ?????????? 00?111??11 ?011??1112 21110?????  
 ??1??????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????231

